

(12) INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(19) World Intellectual Property
Organization
International Bureau



(43) International Publication Date
5 February 2004 (05.02.2004)

PCT

(10) International Publication Number
WO 2004/012229 A2

(51) International Patent Classification⁷:

H01L

(74) Agent: CASEY, Michael, R.; Oblon, Spivak, McClelland,
Maier & Neustadt, P.C., 1940 Duke Street, Alexandria, VA
22314 (US).

(21) International Application Number:

PCT/US2003/019884

(22) International Filing Date: 30 July 2003 (30.07.2003)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:

60/399,380

31 July 2002 (31.07.2002) US

(71) Applicant (for all designated States except US): TOKYO
ELECTRON LIMITED [JP/JP]; TBS Broadcast Center,
3-6, Akasaka 5-chome, Minato-ku, Tokyo 107-8481 (JP).

(72) Inventor; and

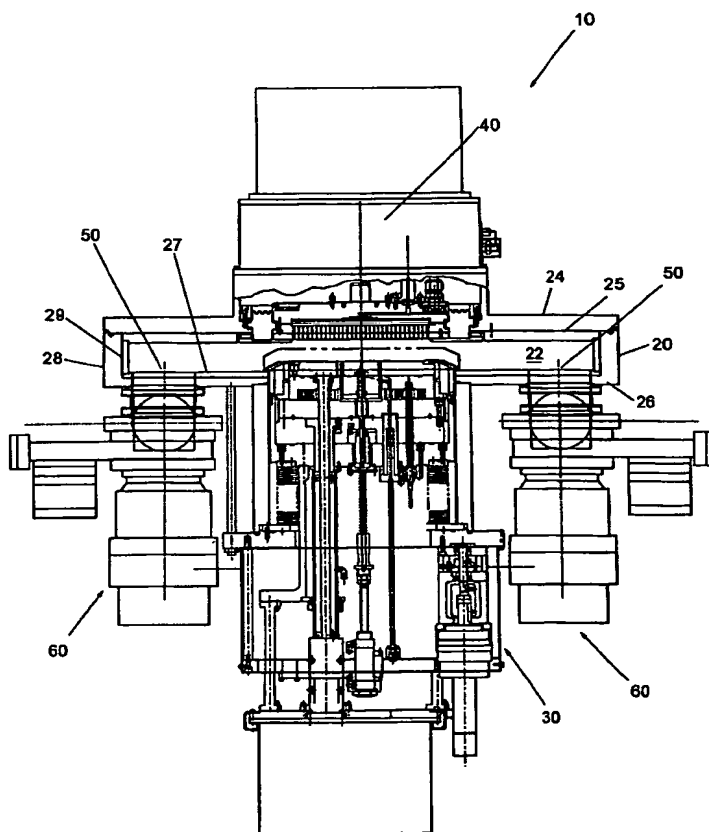
(75) Inventor/Applicant (for US only): FINK, Steven, T.
[US/US]; 4609 E. Gable Circle, Mesa, AZ 85206 (US).

(81) Designated States (*national*): AE, AG, AL, AM, AT, AU,
AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU,
CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH,
GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC,
LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW,
MX, MZ, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC,
SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA,
UG, US, UZ, VC, VN, YU, ZA, ZM, ZW.

(84) Designated States (*regional*): ARIPO patent (GH, GM,
KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW),
Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM),
European patent (AT, BE, BG, CH, CY, CZ, DE, DK, EE,
ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, RO,
SE, SI, SK, TR), OAPI patent (BF, BJ, CF, CG, CI, CM,
GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

[Continued on next page]

(54) Title: REDUCED VOLUME, HIGH CONDUCTANCE PROCESS CHAMBER



(57) Abstract: A vacuum processing apparatus including a process chamber having a plurality of pumping ports, and a plurality of pumping cells each connected to a respective pumping port of the plurality of pumping ports. The plurality of pumping ports is preferably located on a lower wall of the process chamber adjacent to a process chamber volume. A process chamber is also provided that includes a lower wall and a side wall, where the side wall has a height of about four inches. The vacuum processing apparatus further includes a chamber liner configured to displace open volume within the process chamber.